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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,045	09/13/2002	Hsu-Feng Ho	MTKP0019USA	2582

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MERRIFIELD, VA 22116

EXAMINER

KINKEAD, ARNOLD M

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

file copy

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**Office Action Summary**

Application No.

10/065,045

Applicant(s)

HO ET AL.

Examiner

Arnold M Kinhead

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,10,11,12,13-15 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Information Disclosure Statement*

On I.D.S. submitted 09-23-02 foreign references submitted #2, 3 and 7 have been lined through because they do not have anything to do with the subject matter and the listing may have been a typo. Please check.

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, line 3, does the charge pump receive the “ input signal” or is it the “ tuning signal?”

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2,3,4,5,6, 10 and 17-20(as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Nogawa(US 6,154,071).

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1. The reference by Nogawa discloses a phase locked loop(see figures 4 and 10) comprising, as shown in figure 4, a phase comparator/detector(101) for receiving an input signal(reference/reproduction signal) and feedback from the Voltage Controlled Oscillator(106) connected between a low pass filter(105) and the phase detector(101). A charge pump(104) is shown connected to the phase detector(101). Note the phase error signals are passed to the pump via the mask gate(" signal resaper" ). As shown in figure 10, the period of a pulse(phase error signal)(UP/DOWN signal input(s) to the mask gate is lengthened(see UP/DOWN pulse period after masking gate circuit(" reshaper" ).) AS noted in col. 11, lines 48-54, a frequency comparator(inherently sends a frequency difference to charge pump) may be required in cases where the input reference frequency is a lot higher than the VCO output(feedback).
2. As noted in col. 5, lines 1-30, the mask circuit is active only when frequency locking(synchronizing the VCO output with a new target frequency) and thus causes the charge pump to output the required current for sychronization to occur rapidly(the phase error signal is " reshaped " at this time.) Otherwise the PLL will function in normal mode without any reshaping of the phase error signal output(matching operation occurs.)Inherent to the operation outlined in part 2, the reshaper will be active when the output of the VCO is lower(in a lower range) than the target frequency, or if it is higher(in a higher range) than the target frequency. This is when the PLL still has not locked to the target frequency. The normal mode(unreshaped) error signal not capable of synchronizing the target and output frequencies.(see col 1, lines 5-8 and col. 5, lines 1-27). The method steps of claims 17-19 are inherent to the structure as disclosed above in the reference.

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Claims 11 and 12(as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Hogeboom(US 5,818,304, cited by applicant).

The reference by Hogeboom discloses a phase locked loop and its operation(see figures 1 and 3) comprising, as shown in figure 1, a phase comparator/detector(114) for receiving an input signal(data) and feedback(VCOoutput) from the Voltage Controlled Oscillator(118) and produces an error signal(CPf,CPs). The VCO is connected between a low pass filter(124) and the phase detector(114). A charge pump is shown connected to the phase detector(114); the LPF receives the charge pump output signal. Note the control signal to tune the pump includes signal (Vcs). As shown in figure 3(see col. 6, lines 27-40.) The charge pump inherently changes the frequencyof the feedback signal based on the output Of the phase detector during frequency matching(fine tuning) and also during the synchronizing(coarse lock mode) with the frequency detector in the loop to approach the target frequency of the data input(see col. 9, lines 41-58).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 11, and 13 - 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Aoki(US 6,525,612).

The reference by Aoki discloses a phase locked loop and its operation(see figures 2 and 4) comprising, as shown in figure 2, a phase comparator/detector(22) for receiving an input signal(LDR) and feedback(LDP) from the Voltage Controlled Oscillator(26) and produces an error signal(PR,PP). The VCO is connected between a low pass filter(25) and the phase detector(22). A charge pump(24) is shown connected to the phase detector(22); the LPF receives the charge pump output signal. Note the control signal to tune the pump includes signal (SW). As shown in figure 4, the amplitude of a current pulse output of the pump(DO high speed mode) is increased(" reshaped" ) when synchronizing the VCO output to a target frequency(LDR on the input to the phase comparator) as compared with the normal mode current pulse (during matching of the input signal frequency) (see DO pump output). (See col. 4, lines 6-36)

As noted in col. 4, lines 1-36, and col. 5, lines 1-25, the charge pump (" reshaping" ) is active only when frequency locking(synchronizing the VCO output with a new target frequency) and thus causes the charge pump to output the required current for synchronization to occur rapidly(the phase error signal is " reshaped " at this time.) Otherwise the PLL will function in normal mode without any reshaping of the phase error signal output(matching operation occurs.)Inherent to the operation, the reshapener will be active when the output of the VCO is lower(in a lower range) than the target frequency, or if it is higher(in a higher range) than the target frequency. This is when the PLL still has not locked to the target frequency. The normal mode(unreshaped) error signal not capable of synchronizing the target and output frequencies.

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*Allowable Subject Matter*

3. Claims 7-9 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The examiner could not find fair suggestion in the prior art of record for the charge pump with tuning input in the PLL as claimed in claim 11 used with an EFM input signal with the PLL incorporated in a controller for a CD drive(claim 16)...also, the details of claim 1 with the reshaper increases/decreases a pulse width(claim 7), or the charge pump increases/decreases an amplitude of a current(claim 8), or the controller for controlling the pump and reshaper(claim 9).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinkead whose telephone number is 703-305-3486. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Arnold M Kinkead  
Primary Examiner  
Art Unit 2817